

PRODUCT SYNOPSIS



**Variable-area Flow-meter
with metallic measuring tube**



金属管浮子流量计

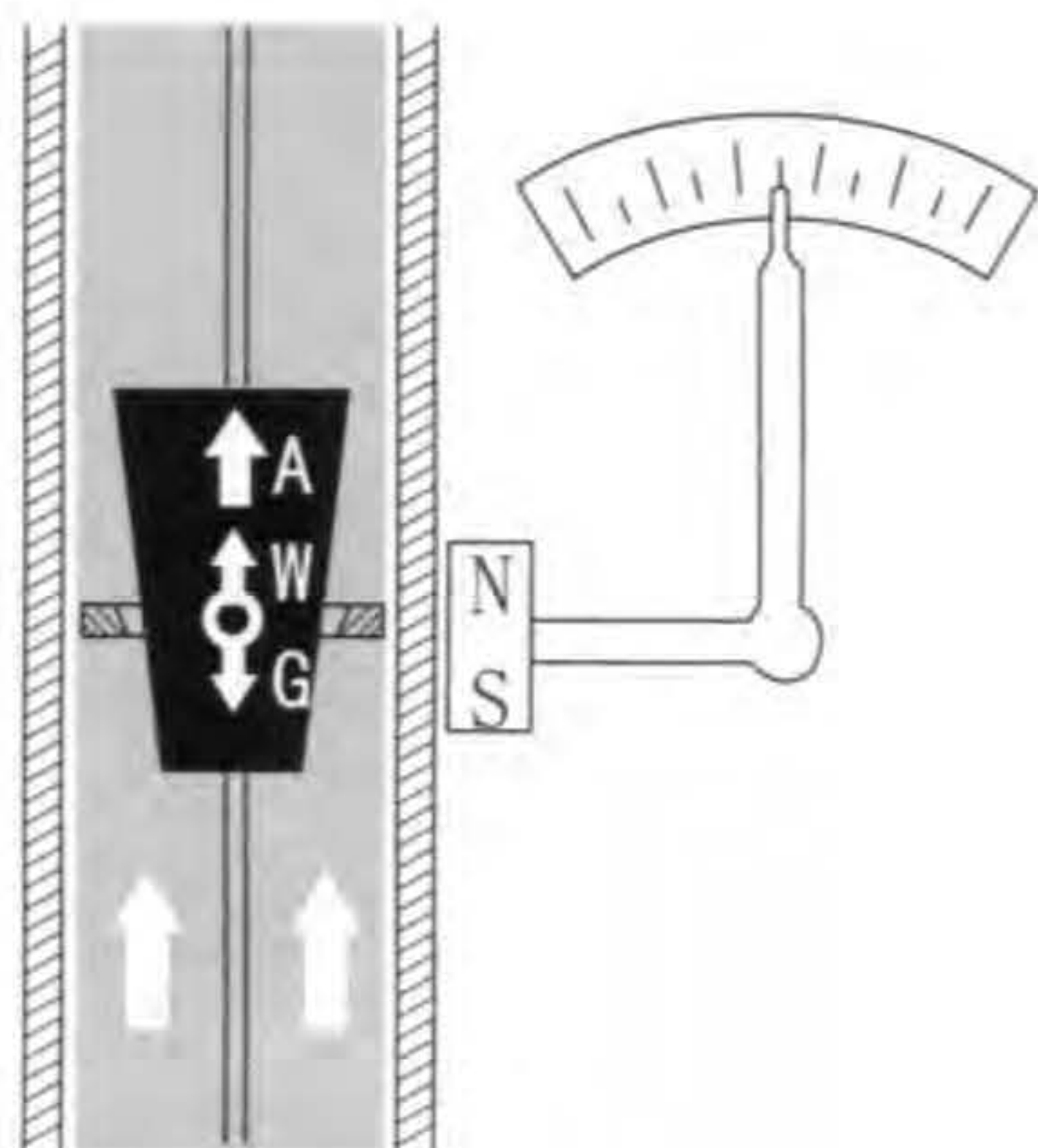
LZ系列金属管浮子流量计，具有结构简单、工作可靠、适用范围广、精度较高、安装方便等特点。该系列流量计与玻璃转子流量计比较，具有耐高压、高温、安全感强、读数简单等特点。并可适用与不透明介质和腐蚀性介质的流量测量。仪表管体及法兰采用不锈钢（1Cr18Ni9Ti或316L），常规性孔板、浮子采用不锈钢，防腐性的孔板、浮子及管体内衬采用防腐材料PTFE。

注：本公司还生产DN4 - Dn100全系列玻璃转子流量

测量原理

LZ系列金属管浮子流量计为变面积式流量计，即在流量计的垂直测量管中，当流体向上流经管子时，浮子向上移动，在某一位置浮子所受升力与浮子重力达到平衡，此时浮子与孔板（或锥管）间的流通环隙面积保持一定。环隙面积与浮子的上升高度成比例，即浮子的某一高度代表流量的大小。浮子上下移动时，以磁耦合的形式将位置传递到外部指示器，使指示器的指针跟随浮子移动，并借助凸轮板使指针线性地指示流量值的大小。

电远传型是在指针现场指示的同时再通过角位移传感器及电变送电路，把流量值精确地转换成4~20mA或0~10mA的标准电流信号。



LZ Series Variable-area Flow-meter With Metallic Measuring Tube has the characteristics of simple construct, work reliable, widely used high precision. Convenient installing. Compared with the Variable-area Flow-meter with Glass Tube, this series has the characteristics of high-pressure proof, high-temperature proof safety, ocular reading etc. It can be suitable to measure the opaque medium and corrosive medium. The tube and the flange uses the material of stainless steel(1Cr18Ni9Ti or 316L). The orifice, floater of normal series uses material of Stainless steel, The orifice, float and the tube lining of Anticorrosion series uses the anticorrosion material of PTFE(Teflon).

NOTE:our company also produces DN4~DN100 all series Variable-area Flow-meter With Glass Tube

MEASURE PRINCIPLE

LZ Series Variable-area Flow-meter With Metallic Measuring Tube is the Variable-area Flow-meter.As the fluid flow upwards in the metal tube,the floater moves upwards to a certain position where the lift force and the gravitational force meets balance,at the moment,the circulation area between the float and the orifice(or the cone tube) keeps fixed. The circulation area is in proportion to the height of the floater, it means the height of the floater represent the volume of the flow. When the floater moves up and down, it transmit its position to the indicator outside in the form of Magnetic-coupling, in this way make the needle of the indicator moves following the movement of the floater, and by using the cam board to show the value of flow linearly on the

Electricity remote transmit means so far as the needle of the indicator pointed out the value, the flow-meter change the value into standard electric current signals of 4~20mA or 0~10mA accurately using angle displacement sensor and electric circuit.

技术参数

TECHNIQUE PARAMETER

仪表类型 instrument type	LZZ LZZD Series
流量范围 flow range	Water 2.5~100000L/h(详见下表) Air 0.07~3000m3/h(see form as follow)
范围度 range ration	DN≤100mm:10:1 DN>100mm:5:1
精 度 accuracy	Standard type: +2.5 5%FS,the special order:can be up to ±1.0%FS 标准型2.5级 特殊订货可达1.0级
最大工 maximum working 作压力 pressure	DN15,DN25,DN40,DN50:4.0MPa DN80,DN100,DN150:1.6MPa
介质温度medium temperature	Normal of H1:-40℃~-100℃,High temperature type H2:-80℃~-250℃ 普通型H1:-40℃~100℃ 高温型H2:-80℃~250℃
环境温度environment temperature	-25℃~+55℃
连接方式 conjunction way	Flange connection(flange standard:refer to GB9115-88,JB82-59),法兰连接 (法兰标准: 参照GB9115-88, JB82-59, can be made by the user'S requirement. 特殊规格根据用户需求而定)
防爆等级 explosion-proof grade	Exib II CT4 Install the safe grid LB987S ExibIICT4配安全栅LB987S Explosion-proof number of certificate GYB00563 防爆合格证号GYB00563
防护等级 protection grade	IP65
粘度 viscosity	DN15:≤5mpa.s,DN25~DN150:≤250mPa.s
产品执行标准 products executive standard	JB/T6844-1993

规格

SPECIFICATION

通径 Caliber (mm)	工作号 Work number	流 量 范 围 flow range				压力损失 pressure loss kPa		
		Water L/h*		Air m3/h*		Water		空气 Air
		常规型 normal type	防腐型 rot'-proof type	常规型 normal type	防腐型 rot'-proof type	常规型 normal type	防腐型 rot'-proof type	
15	1 A	2.5~25	--	0.07~0.7	6.5	-	7.1	
	1 B	4.0~40	2.5~25	0.11~1.1	6.5	5.5	7.2	
	1 C	6.3~63	4.0~40	0.18~1.8	6.6	5.5	7.3	
	1 D	10~100	6.3~63	0.28~2.8	6.6	5.6	7.5	
	1 E	16~160	10~100	0.48~4.8	6.8	5.6	8.0	
	1 F	25~250	16~160	0.7~7.0	7.0	5.8	10.8	
	1 G	40~400	25~250	1.0~10	8.6	6.1	10.0	
	1 H	63~630	40~400	1.6~16.0	11.1	7.3	14.0	
25	2 A	100~1000	63~630	3~30	7.0	5.9	7.7	
	2 B	160~1600	100~1000	4.5~45	8.0	6.0	8.8	
	2 C	250~2500	160~1600	7~70	10.8	6.8	12.0	
	2 D	400~4000	250~2500	11~110	15.8	9.2	19.0	
40	4 A	500~5000	300~3000	12~120	10.8	8.6	9.8	
	4 B	600~6000	350~3500	16~160	12.6	10.4	16.5	
50	5 A	630~6300	400~4000	18~180	8.1	6.8	8.6	
	5 B	1000~10000	630~6300	25~250	11.0	9.4	10.4	
	5 C	1600~16000	1000~10000	40~400	17.0	14.5	15.5	
80	8 A	2500~25000	1600~16000	60~600	8.1	6.9	12.9	
	8 B	4000~40000	2500~25000	80~800	9.5	8.0	18.5	
100	10A	6300~63000	4000~40000	100~1000	15.0	8.5	19.2	
150	15A	20000~100000	--	600~3000	19.2	--	20.3	

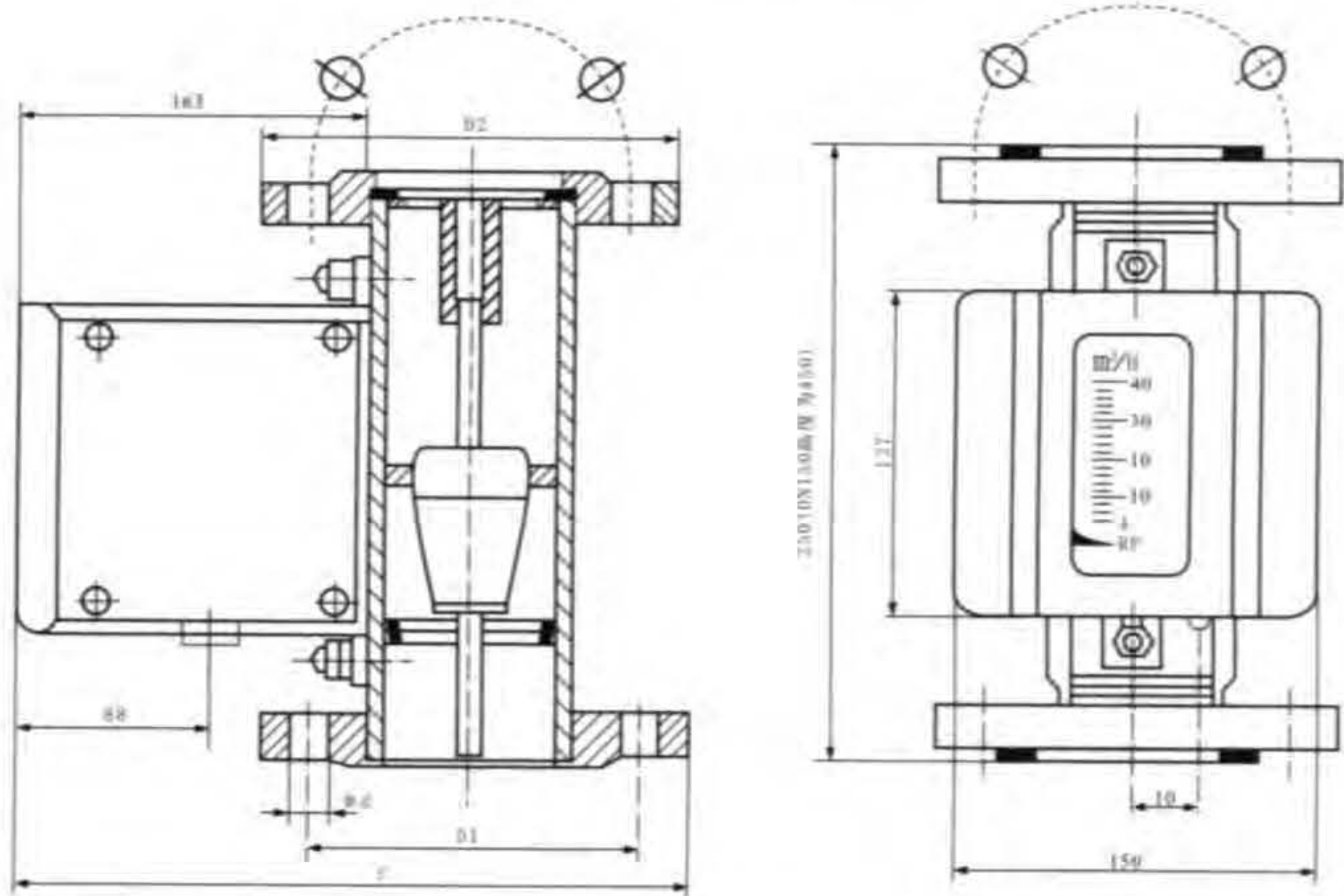
金属管浮子流量计

安装尺寸mm

caliber	D1	D2	Bord Number- ϕ D	f
15	65	95	4- ϕ 14	224
25	85	115	4- ϕ 14	245
40	110	150	4- ϕ 18	266
50	125	160	4- ϕ 18	285
80	160	195	8- ϕ 18	306
100	180	215	8- ϕ 18	336
150	240	280	8- ϕ 23	386



DIMENSIONS mm



主要结构及尺寸

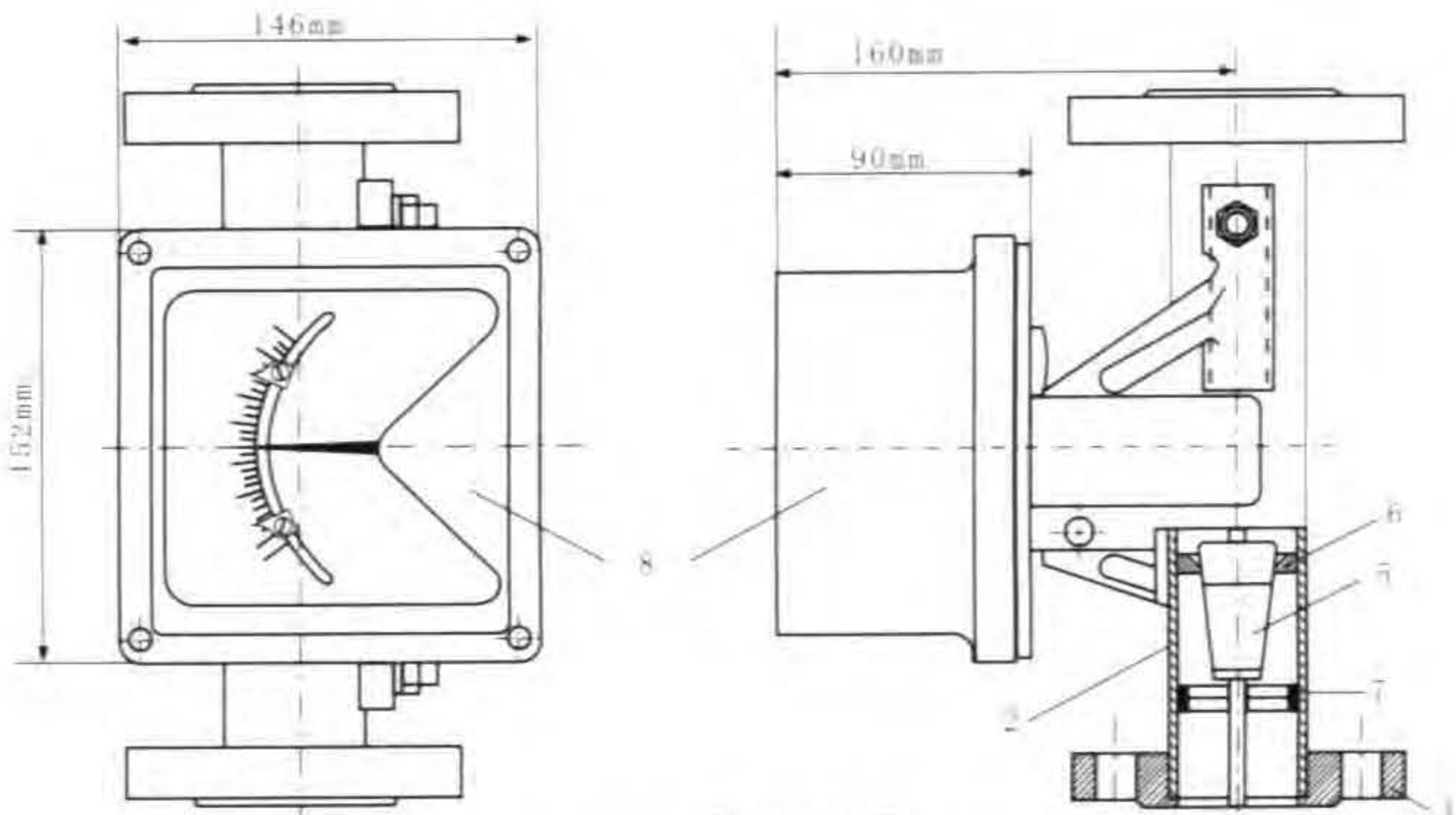
结构：每台仪表主要包括测量管与仪表传感指示器

constructure:every instrument including measure tube and instrument sensing indicator

1. 法兰
2. 管体
3. 紧固圈（档圈）
4. 浮子止档（或气阻尼器）
5. 浮子
6. 孔板（或锥管）
7. 浮子导向盘
8. 指示器
9. 信号线接口
10. PTFE内衬

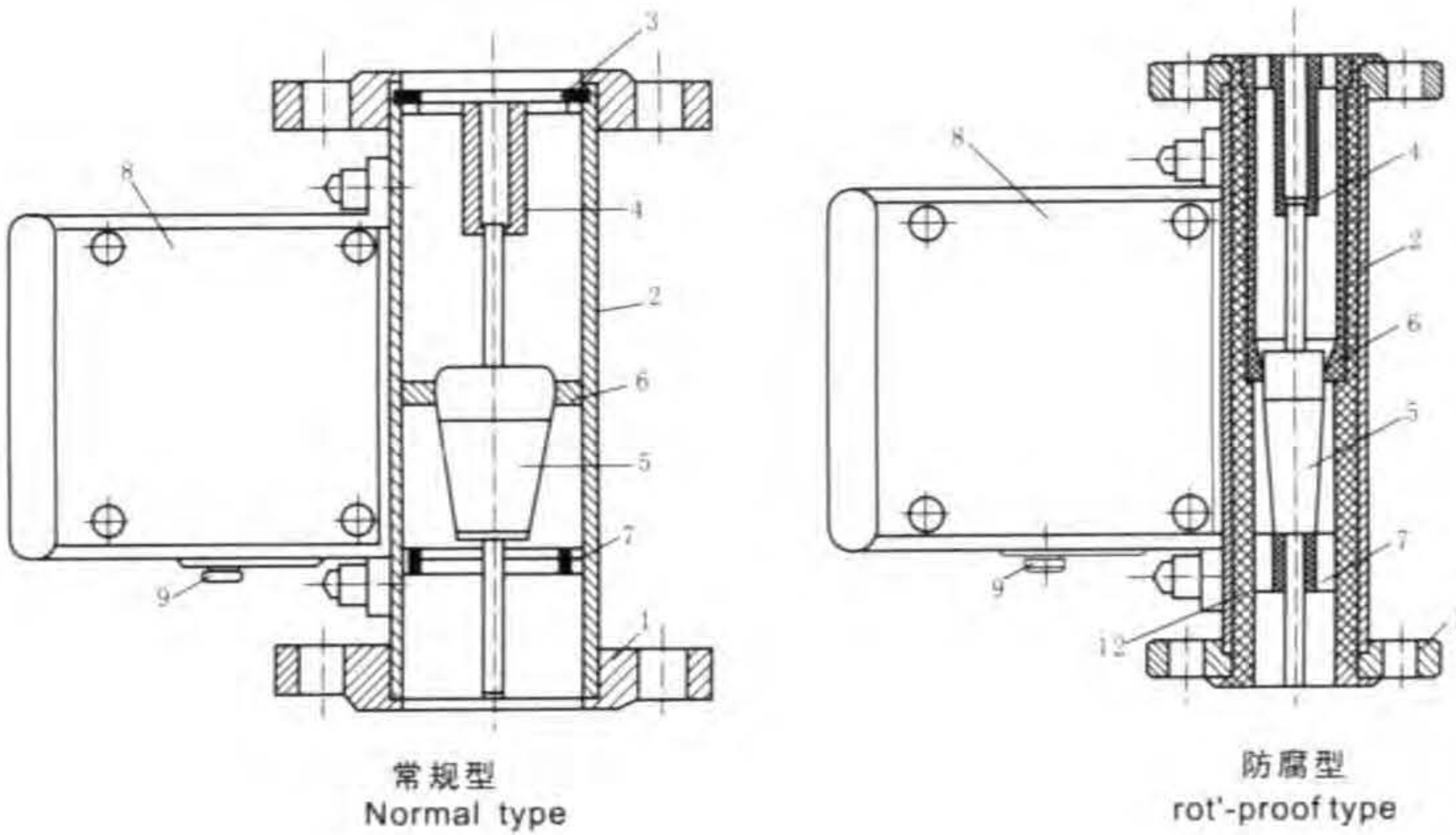
- 1.flange
- 2.tube body
- 3.fasten and enclosed circle
- 4.floater stop shaft
- 5.floater
- 6.orifice hole(or cone tube)
- 7.floater leader panel
- 8.indicator
- 9.singnal line connection
- 10.PTFE(Teflon)

MAIN CONSTRUCTION AND DIMENASIONS



指示器外形图
(表头材质为不锈钢，特别适用于化工行业)

M10 indicator
(stainless steel material. Especially for chemical industry)



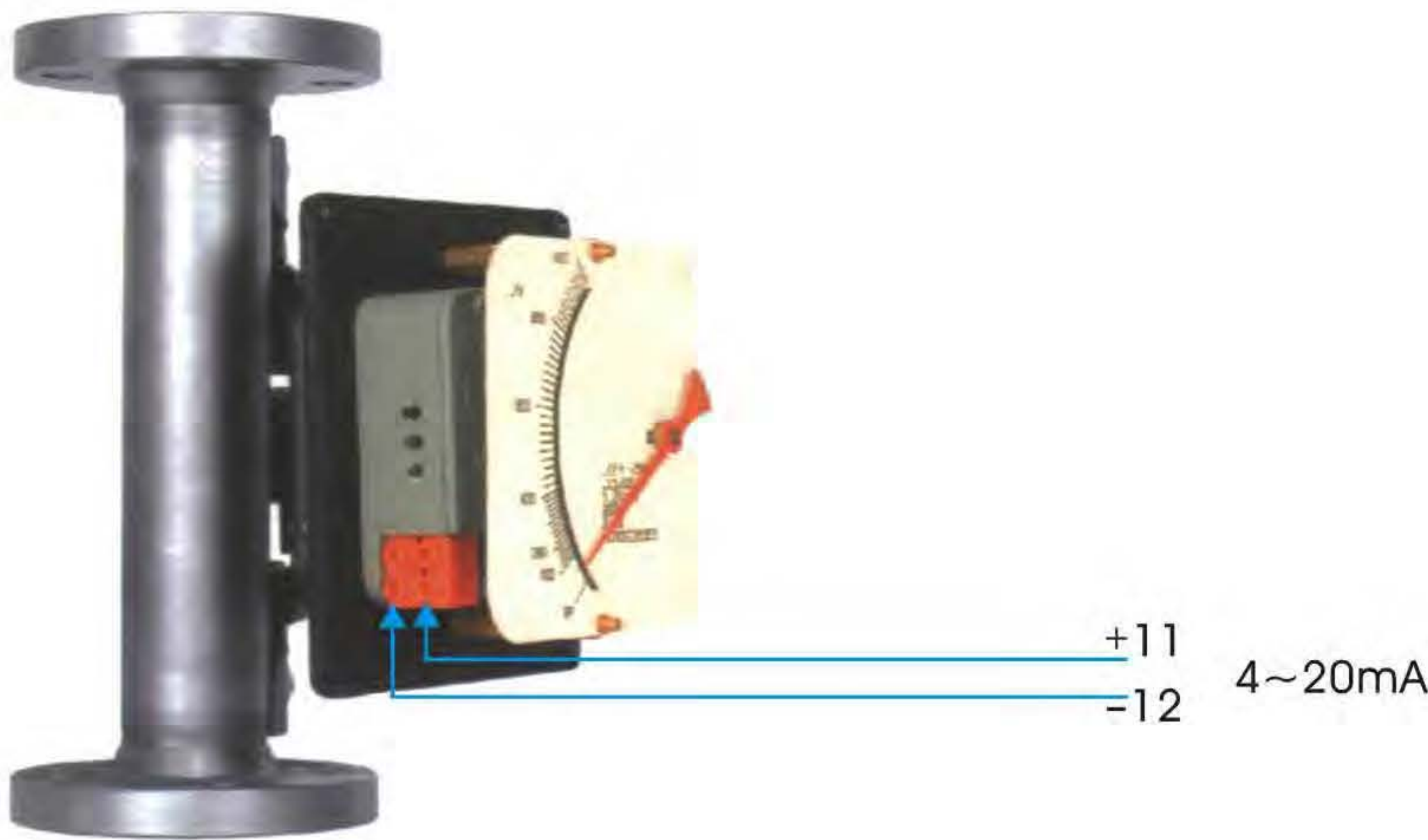
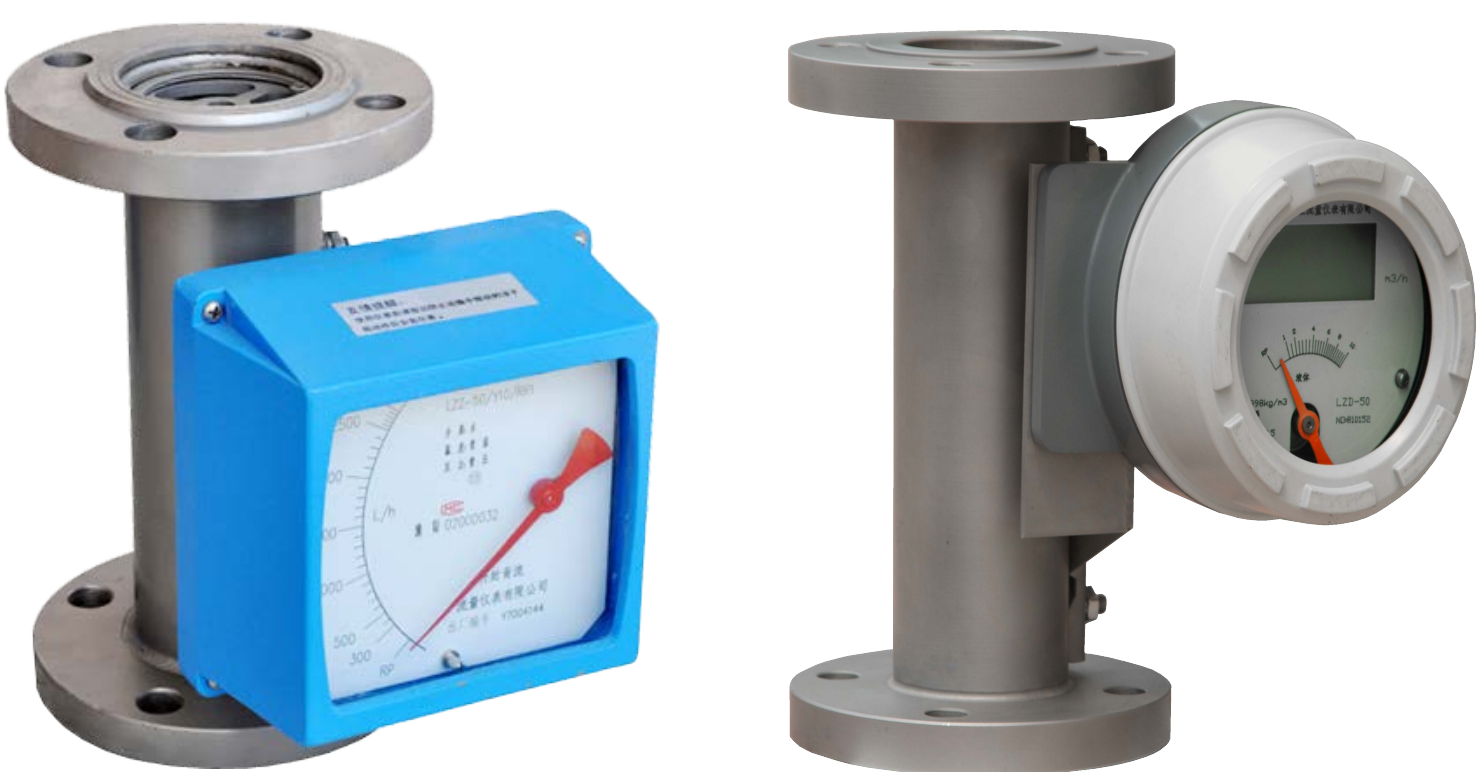
常规型
Normal type

防腐型
rot'-proof type

金属管浮子流量计

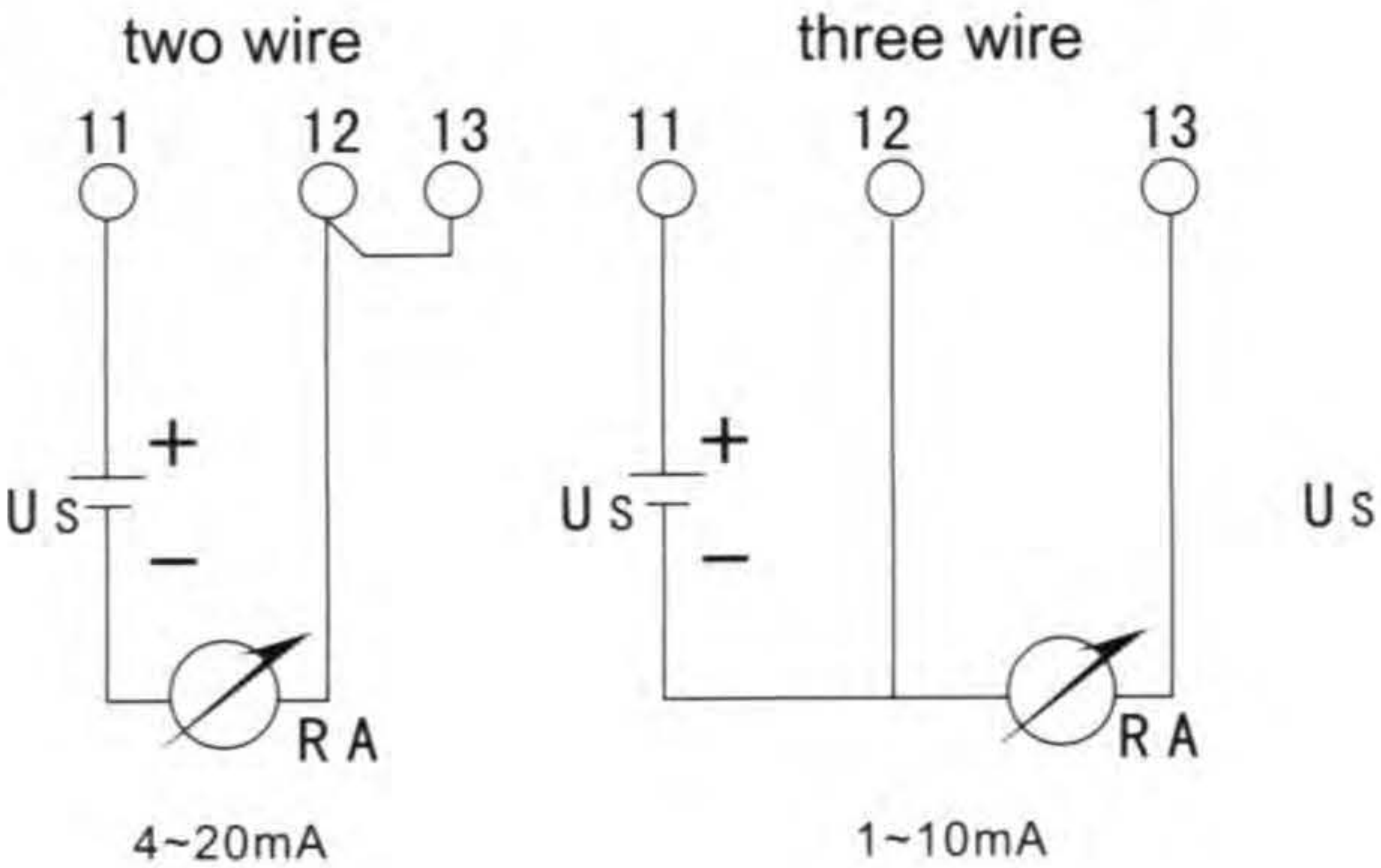
M10指示器电变送接线示意图

M10LNDICATOR



电远传性能及接线图 ELECTRICITY REMOTE TRANSMIT PERFORMANCE AND WIRING DIAGRAM

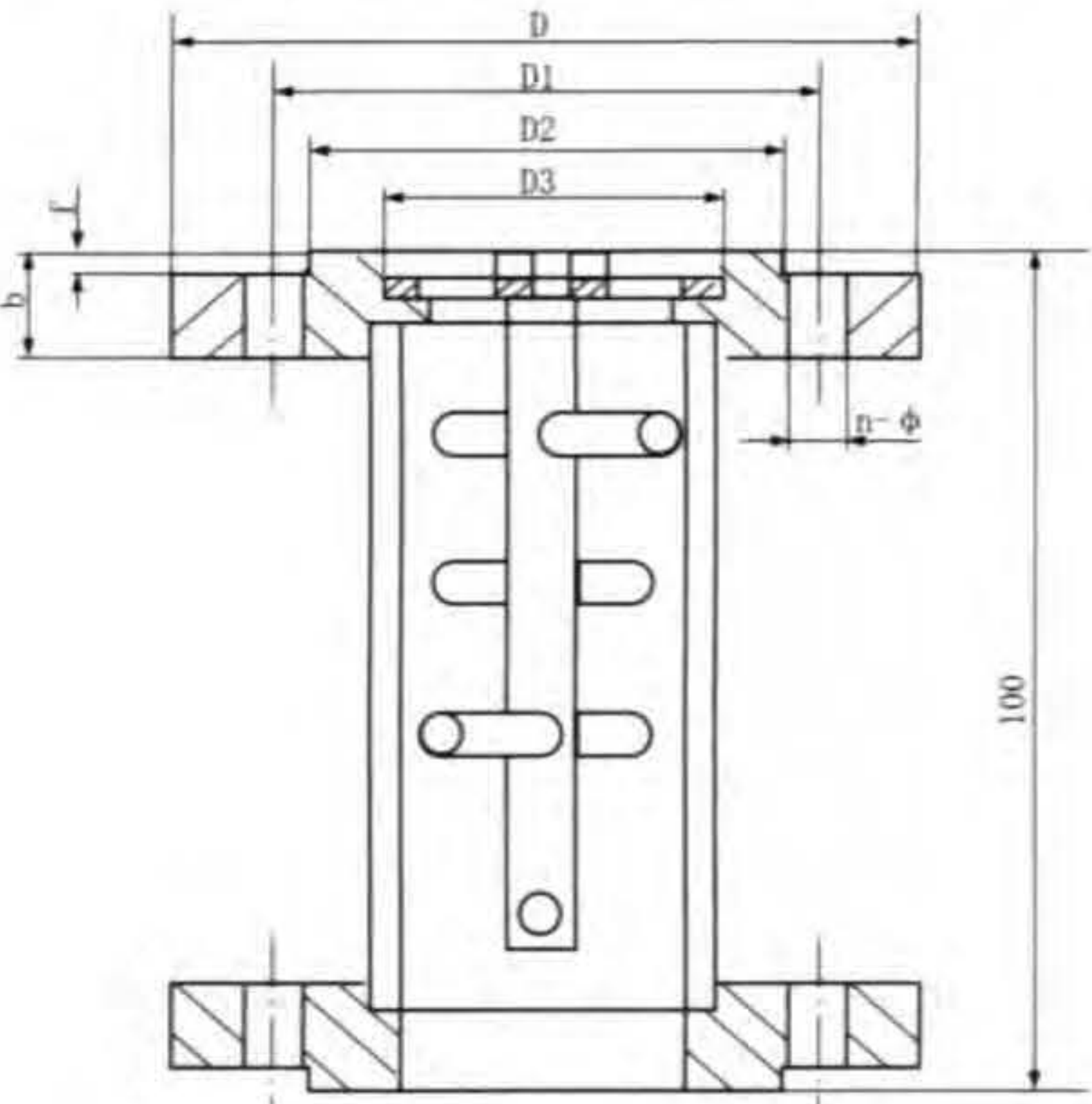
电源号 power supply: 24V DC
输出信号 output signal: two wire 4~20mA
three wire 0~10mA
最大负载 maximum loaded: 750
线性度 Linear accuracy: $\pm 1\%$
信号线接口 signal line connection: M20 $\times$ 1.5
US-电源24VDC
US-power supply24VDC
RA-负载电阻
RA-load electricity resistance



磁过滤器法兰尺寸

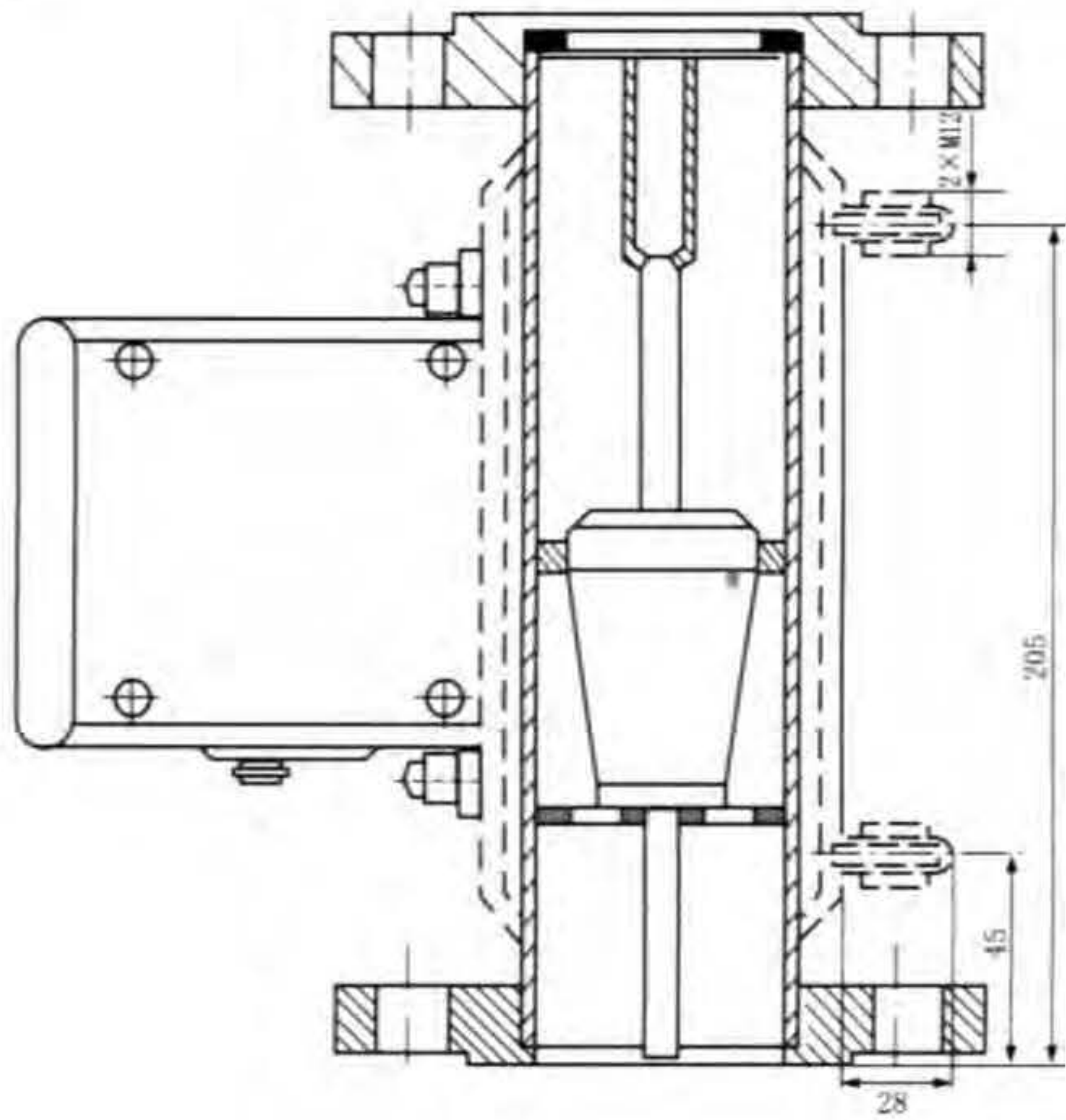
DIMENSIONS OF MAGNETISM FILTER

通径 caliber	D	D1	D2	D3	b	f	n- ϕ
15	$\phi 95$	$\phi 65$	$\phi 46$	$\phi 30$	17	3	4- $\phi 14$
25	$\phi 115$	$\phi 85$	$\phi 65$	$\phi 40$	17	3	4- $\phi 14$
40	$\phi 150$	$\phi 110$	$\phi 84$	$\phi 50$	18	3	4- $\phi 18$
50	$\phi 160$	$\phi 125$	$\phi 90$	$\phi 58$	19	3	4- $\phi 18$
80	$\phi 195$	$\phi 160$	$\phi 132$	$\phi 104$	19	3	8- $\phi 18$



金属管浮子流量计

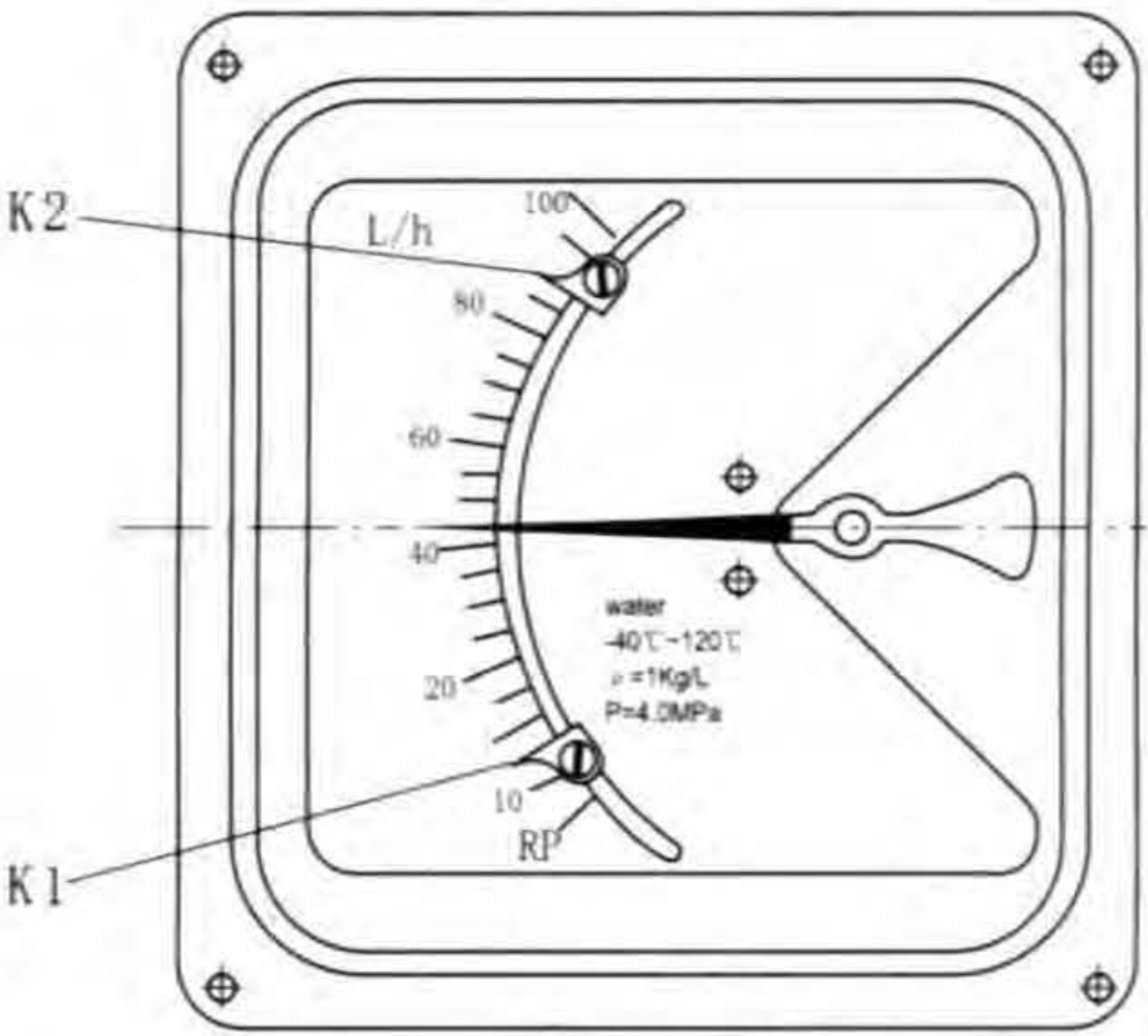
隔套管



Keep warm



KEEP WARM

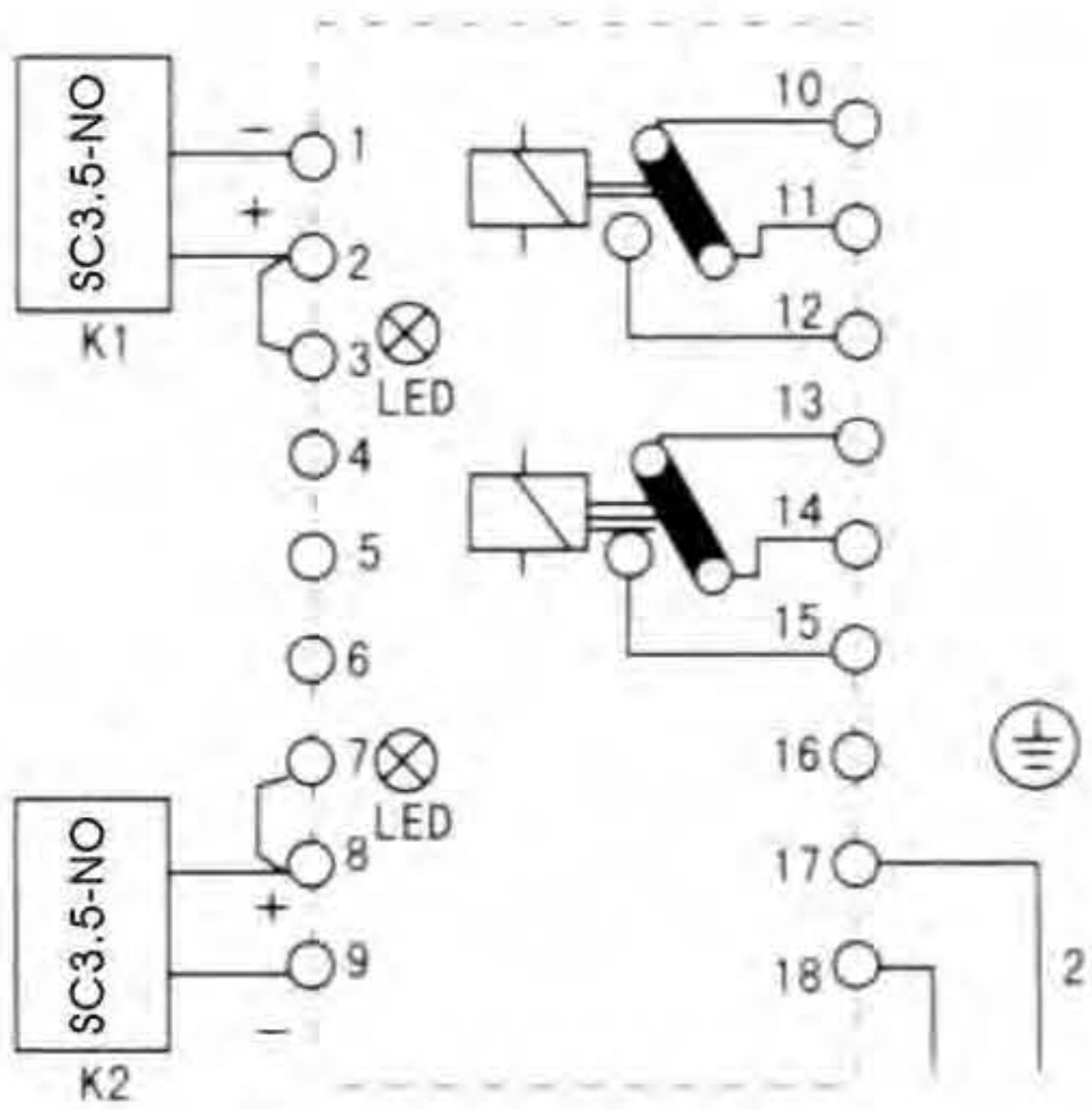


Restrict switch indicator

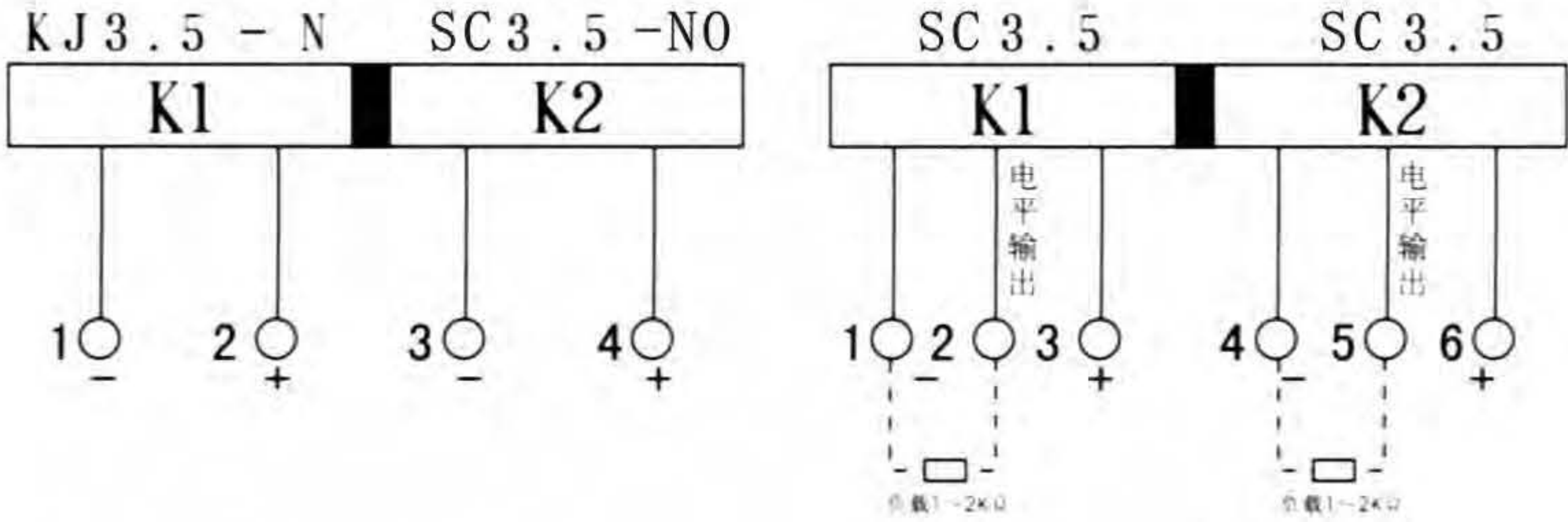
限位开关

限位开关 restrict switch	SC3.5-N0 (本安防爆型) (Essence safe type)	SC3.5 (普通直接型) (Common direct type)
额定电压 rated voltage	8V DC	24V DC
有效面积开 valid area open	$\geq 3\text{mA}$	
有效面积关 valid area closed	$\leq 1\text{mA}$	
自电感 induction	160 μH 与危险场合有关 have the relation with dangerous occasion	
自电容 electric capacitance	20nF	
环境温度 environment temperature	25℃~+100℃(maximum electric signal output 60℃)	
防护类型 protection type	Ip65	

RESTRICT SWITCH

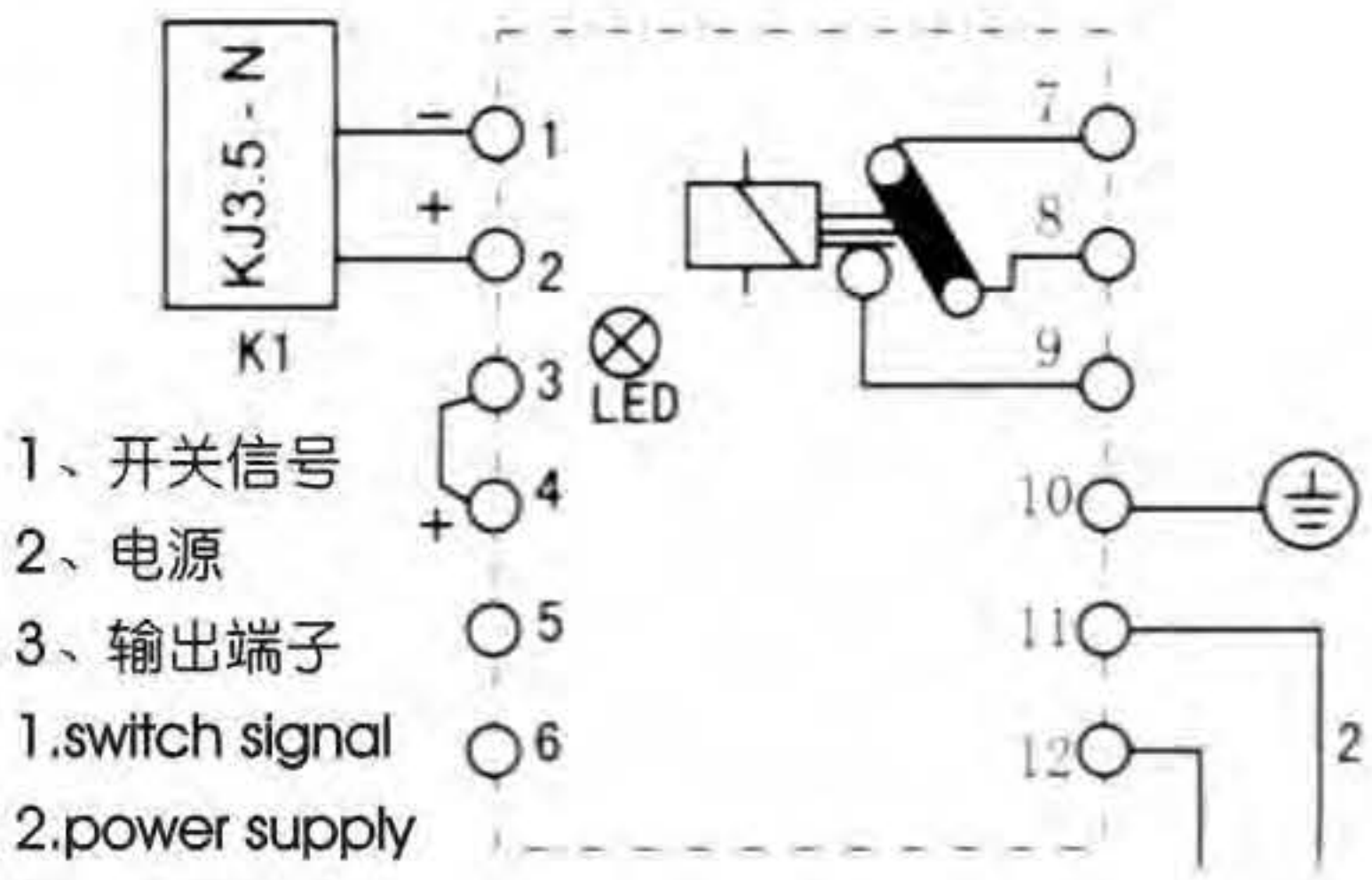


WE77/EX-2



本安防爆型
Essence safe type

普通直接型
Common direct type



WE77/EX-1

指示器内可装一个或两个限位开关 (K1, K2), 当流量达到限定值时输出报警信号。报警开关在出厂时已按用户要求设置了控制流量点, 或用户通过打开M10指示器盖, 自行随意设置K1、K2对应位置。SC3.5-N0限位开关为本安防爆型, 应与晶体管放大器 (WE77/EX1.2需单独订货) 配套使用。SC3.5限位开关为普通直接型, DC24V供电, 三线制直接输出约23.5V电平信号, 进PLC调节系统。

One or two location limited switch as can be installed in the indicator, when the flow arrives at the limited value,the alarm switch will send the alarm signal. The flow control figure was set when the alarm switch was made. Customer can also open the cover of the M10indicator,set up corresponding powition of K1,K2,to your own will. SC3.5 Limit Location Switch should use together with the transistor amplifir(WE77/EX1.2 order alone) in order to fits the explosion -proof type. SC3.5-N0 Limit Location Switch is common direct type, power supp ly of 24VDC, three wire direct export about 23.5V electric signal to the PLC regulating system.

金属管浮子流量计

型号选择及说明

MODEL SELECTION AND INSTRUCTION



设计选型及基本代码
Design selection and basic code

LZ

Z	就地指示 scene indicator
D	电远传 electricity remote transmit

系列型号选择：	
	垂直安装形式
H	水平安装形式
LA	底进侧出安装形式
AA	侧进侧出安装形式
S	回螺纹连接
M	快速接头连接

测量管材料选择： Measure tube materials selection	
R1	不锈钢1Cr18Ni9Ti Stainless steel 1Cr18Ni9Ti
R0	不锈钢0Cr18Ni12Mo2Ti Stainless steel 0Cr18Ni12Mo2Ti
F	PTFE (Teflon)

指示器型式：Indicator pattern	
M7	指针式线性指示瞬时流量 Pointer linearly indicate instantaneous flow
M10	指针式非线性指示瞬时流量 Pointer non-linearly indicate instantaneous flow

远传变送器选择：Remote transmit changer selection	
Es1	电远传：0~10mA DC 三线制 Es1 electricity remote transmit:0~10mA DC three wire
Es4	电远传：4~20Ma DC 二线制 Es4 electricity remote transmit:4~20mA DC two wire

防爆类型：Flameproof type	
Ex1	本安型与关联设备LB987S安全栅配套防爆等级ExibIICT4 Essence safe type with Connection equipments r, LB987S of equipment.anti-blast grade Exib II CT4

介质状态选择：Medium stage selection	
A	气体（选配气体阻尼器） Air(Gas antivibrator of apolegamy)
L	液体 Liquid

测量管特殊要求：Measure tube special requirement	
T	保温夹套 warmkeeper

报警选择：Alarm Selection	
K1	带一个报警开关 SC 3.5-N0
K2	带二个报警开关 SC 3.5-N0